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Dinesen, Jens Vilhelm

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Toward a unified method for analysing and teaching Human Robot Interaction

This abstract aims to present key aspect of a future paper, which outlines the ongoing development of a unified method for analysing and teaching Human-Robot-Interaction. The paper will propose a novel method for analysing both HRI, interaction with other forms of technologies and fellow humans, drawing on key theories and methods from both communications- and interaction-theory. The aim is to provide a single unified method for analysing interaction, through means of video analysis and then applying theories, with proven mutual compatibility, to reach a desired granularity of study.

In research, valuable time is spend working out which theories are mutually compatible and suited to the task at hand, and likewise, students tasked with analysing interaction, are prone to engage in time consuming literature studies before applying theories. This is neither wrong nor unscientific, but it does result in the students using valuable time in doing initial literature studies, rather than applying scientific tools to analyse a setting. In *bachelor-level-education* or above [1], this is not an issue, as students are expected to have both the necessary time and qualifications to do this. However, if we examine e.g. *short-cycle tertiary education*, the aim is more practically orientated, and usually does not apply the scientific parts of theories.

The Social and Health College in North Jutland (SOSU Nord) is one of the largest social and health colleges in Denmark. Tasked with training staff for future jobs in the social and health sector, we also educate our students in the interaction, use and applications of health- and welfare- technologies in our research laboratory *Future Lab*. Thus, we are faced with the problem of lacking a proper method that allows us to educate students in HRI from an abstract and scientific standpoint, but with a practical aim.

I therefor propose a novel method that includes theories suited for analysing different aspects of human interaction, with both robots, technologies and fellow humans. This method will encompass theories such as Kendons *F-formation spaces* [2], Argyles *Bodily communication* [3] or Ekman's *FACS* [4], as well as other central theories for analysing human interaction via video.

The core of the method will be comprised by a coding scheme that allows users to annotate relevant information in relation to video material, and from there begin a detailed analysis. In addition to this, the core will include a thorough guide that allows both practically oriented users, and users interested in the fine granularity of analysis, to apply the method. This in effect will enable students of e.g. short-cycle tertiary education to apply the method for practical proposes, and student of the e.g. bachelor-level-education or above to take advantage of this thorough guide into the details and scientific compatibility of e.g. Kendons *f-formation spaces* [2], and Ekman's *FACS* [4]. In addition to this core, the method will elaborate on didactic considerations, reasonable expectations to student as well as possible testing when using the method [5]. This supplemented by general considerations on creating proper research-settings in interaction-studies, and illustrative settings for didactic purposes.

While similar methods exist to some extent, all are developed with an abstract mind-set and focus. The proposed method will be unique in its practical focus and thus more appropriate for e.g. short-cycle tertiary education but not limited to this setting in its scope.

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